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dition of the Volcano subsequently to it." By Charles Daubeny, F.R.S., F.G.S., and Professor of Chemistry in the University of Oxford.

It appears, from the information collected by the author, that for a considerable time previously to the late eruption of Vesuvius, stones and scorix had been thrown up from the crater, and had accumulated into two conical masses, the largest of which was more than two hundred feet in height. On the night of the 24th of August last, after the flow of considerable currents of lava, a violent concussion took place, followed by the disappearance of both these conical hillocks, which, in the course of a single night, were apparently swallowed up within the cavities of the mountain. Fresh currents of lava continued to flow for several days subsequently, destroying about 180 houses, spreading devastation over a large tract of country, and destroying all the fish in the neighbouring ponds and lakes. After the 29th of August, no further signs of internal commotion were manifested, with the exception of the disengagement of aqueous and æriform vapours from the crater, a phenomenon which, in a greater or less degree, is at all times observable. The author descended twice into the interior of the crater, which then presented a comparatively level surface; its sides consisting of strata of loose volcanic sand and rapilli, coated with saline incrustations of common salt, coloured red and yellow by peroxide of iron. The vapours which issued from various parts of the surface, collected and condensed by means of an alembic, introduced into the ground, were found to consist principally of steam and muriatic acid, with only a slight trace of sulphureous or sulphuric acids. From a trial with solution of barytes, the author concludes that carbonic acid was also exhaled, but neither nitrogen nor sulphuretted hydrogen appeared to form any part of the gas emitted. The steam issuing from the lava contained both free muriatic acid and also muriate of ammonia, which latter salt could not be detected in the gas from the volcano itself. The author conceives that these volatile principles are entangled in the lava, and are subsequently disengaged.

March 26, 1835.

WILLIAM THOMAS BRANDE, Esq., Vice-President, in the Chair.

"On the Temperature of some Fishes of the Genus *Thunnus*." By John Davy, M.D., F.R.S., Assistant Inspector of Army Hospitals.

The author had occasion to observe, many years ago, that the Bonito (*Thynnus pelamys*, Cuv.) had a temperature of 99° of Fahr. when the surrounding medium was 80° 5, and that it, therefore, constituted an exception to the generally received rule that fishes are universally cold-blooded. Having found that the gills of the common Thunny of the Mediterranean (*Thynnus vulgaris*, Cuv.) were supplied with nerves of unusual magnitude, that the heart of this latter fish was very powerful, and that its muscles were of a dark red colour, he was led to conjecture that it might, like the Bonito, be also warm-blooded; and this opinion is corroborated by the testimony of several intelligent fisher-

men. The author endeavours to extend this analogy to other species of the same family, which, according to the reports of the fishermen of whom he made inquiries, have a high temperature, and in whose internal structure he noticed similar peculiarities as in the Thunny; namely, very large branchial nerves, furnished with ganglia of considerable size. In this respect he considers that in these fishes the branchial system of organs makes an approximation to the respiratory apparatus of the Mammalia, and that it probably contributes to the elevation of temperature, resulting from the more energetic respiration which he supposes to be exercised by these organs. He, however, thinks it not improbable that these fish may possess means of generating heat peculiar to themselves, and of which at present we have no adequate idea. He conceives that the situation of the kidneys, of which a considerable portion is even higher than the stomach, and posterior to the gills, and which are of large size, and well supplied with nerves and blood-vessels, may possibly act a part in the production of an elevated temperature; but, on the whole, he is disposed to ascribe the greatest share of this effect to the superior magnitude of the branchial nerves.